This listing of claims replaces all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-27. (Cancelled)

28. (Currently Amended) A process for preparing a polymer powder ~~in a supercritical fluid~~ comprising:

(a) reacting ~~in a homogeneous phase~~ at least two copolymerizable ethylenically unsaturated monomers with an initiator ~~, said reacting occurring~~ in the presence of a supercritical fluid having a critical temperature and a critical pressure to form a homogeneous reaction mixture containing at least one polymer, at least one of the at least two monomers and supercritical fluid, ~~to form a reaction mixture~~ wherein said homogenous reaction mixture has a temperature and pressure above the critical temperature and critical pressure of the supercritical fluid; ~~and~~

(b) ~~converting~~ separating the homogenous reaction mixture ~~to said polymer powder by depressurizing and removing the supercritical fluid from the reaction mixture~~ into at least two supercritical phases by adjusting at least one process parameter selected from temperature, pressure, supercritical fluid, and combinations thereof, said at least two supercritical phases comprising a supercritical phase I containing the at least one polymer and supercritical fluid and a supercritical phase II containing the at least one monomer and supercritical fluid;

(c) separating said supercritical phase I from said supercritical phase II; and

(d) converting said supercritical phase I into a polymer powder by depressurizing and removing the supercritical fluid from said supercritical phase I.

29. (Cancelled)

30. (Previously presented) The process of claim 28 wherein the supercritical fluid is a non-reactive supercritical solvent.

31. (Currently Amended) The process of claim 28 wherein said reacting comprises at least three copolymerizable ethylenically unsaturated monomers, wherein ~~and~~ at least one of the at least three copolymerizable ethylenically unsaturated monomers contains[[ing]] an additional functional group.

32. (Previously presented) The process of claim 28 wherein said supercritical fluid comprises up to 20 wt % of an organic solvent.

33. (Currently Amended) The process of claim 28 wherein said ~~reacting occurs at a~~ pressure is between 80 to 450 bar and ~~at a~~ said temperature is between 70 to 250 °C.

34. (Currently Amended) The process of claim 28, wherein said process ~~that~~ is selected from a batchwise process [[or]] and a continuous process.

35. (Previously presented) The process of claim 28 wherein depressurizing the supercritical fluid causes a volatile accompanying substance to separate from said polymer powder.

36. (Currently Amended) The process of claim ~~29~~ 28 further comprising purifying said supercritical phase I before said supercritical phase I is converted into a polymer powder in conversion step (d) ~~wherein an additional depressurization step purifies said phase I prior to said depressurizing~~.

37. (Currently Amended) The process of claim 36 wherein ~~said additional depressurization step is~~ a supercritical fluid is used in a counter-current extraction process in the purifying of said supercritical phase I ~~using a supercritical fluid~~.

38. (Currently Amended) The process of claim ~~29~~ 28 wherein said supercritical phase II is ~~separated and~~ recycled into said reacting step (a).

39. (Currently Amended) The process of claim 38 wherein the supercritical fluid is separated from said supercritical phase II before said supercritical fluid is recycled into said reacting step (a).

40. (Previously presented) A process for preparing a powder coating comprising:

(a) forming a polymer powder using the process of claim 28; and

(b) processing said polymer powder to form said powder coating.

41. (Previously presented) The process of claim 40 wherein said powder coating is formed using an extrusion process, an ultrasonic atomization method, a supercritical fluid, or a steam assisted micronization.

42. (Previously presented) The process of claim 41 that further comprises the addition of at least one of a hardener, powder coating additive, dye, pigment, and extender.

43. (Currently amended) A process for preparing a powder coating comprising:

(a) reacting ~~in a homogeneous phase~~ at least two copolymerizable ethyl[[l]]enically unsaturated monomers with an initiator[[,]] ~~said reacting occurring~~ in the presence of a supercritical fluid having a critical temperature and a critical pressure to form a homogeneous reaction mixture containing at least one polymer, at least one of the at least two monomers and supercritical fluid, ~~to form a reaction mixture~~ wherein said homogenous reaction mixture has a temperature and pressure above the critical temperature and critical pressure of the supercritical fluid;

(b) separating the reaction mixture into ~~adding additional supercritical fluid or altering the temperature or pressure of the reaction mixture to form~~ at least two supercritical phases[[,]] by adjusting at least one process parameter selected from temperature, pressure, supercritical fluid, and combinations thereof, said at least two supercritical phases comprising a supercritical phase I containing ~~predominantly~~ the at least one polymer and supercritical fluid and a supercritical phase II containing ~~predominantly unreacted~~ the at least one monomer[[s]] and supercritical fluid;

(c) separating said supercritical phase I from said supercritical phase II; ~~and~~

(d) processing said supercritical phase I by adding at least one additional ~~components of a~~ powder coating component to form a supercritical phase I process mixture; and

(e) converting the supercritical phase I process mixture to said polymer powder by depressurizing and removing the supercritical fluid from the process mixture.

44. (Currently Amended) The process of claim 43 wherein said separated supercritical phase I undergoes a further step of separating at least one accompanying substance[[s]].

45. (Currently Amended) The process of claim 43 wherein said at least one additional powder coating component[[s]] ~~include~~ is a hardener that reacts with functional groups of the polymer prior to said processing.

46. (Currently Amended) The process of claim 43 wherein ~~further~~ at least one additive[[s]] ~~are~~ is added to the process mixture.

47. (Currently Amended) The process of claim 43 wherein said at least one additional powder coating component[[s]], before being added, ~~are~~ is homogenized in a super[[ ]]critical fluid.

48. (Previously presented) The process of claim 43 wherein the process mixture is sprayed by a nozzle into a spray tower or a liquid.

49. (Previously presented) The process of claim 48 wherein said liquid is an aqueous medium.

50. (Currently Amended) The process of claim 48 wherein the super[[ ]]critical fluid that is gaseous after spraying is purified and recycled in said process.

51. (Previously presented) The process of claim 43 wherein said reacting comprises at least three copolymerizable ethylenically unsaturated monomers, wherein at least one monomer additionally contains further reactive functional groups, and wherein the dispersity of the polymer is < 3.

52. (Previously presented) A powder coating prepared by the process of claim 51, wherein said powder coating has an average particle size below 50 µm.

53. (Previously presented) The powder coating of claim 52 that is a powder clear coat.

54. (Previously presented) The powder coating of claim 53 that is colored with at least one of a pigment or a dye.